UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,278	07/22/2003	C. James MacLennan	MSFT-1735/303422.1	7469

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WOODCOCK WASHBURN LLP
ONE LIBERTY PLACE, 46TH FLOOR
1650 MARKET STREET
PHILADELPHIA, PA 19103

EXAMINER
LU, CHARLES EDWARD

ART UNIT	PAPER NUMBER
2163	

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/624,278	MACLENNAN ET AL.
	Examiner	Art Unit	
	Charles E. Lu	2163	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 April 2006*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

Response to Amendment/Response to Arguments

1. This Action is in response to the amendment dated 4/27/2006. Claims 1-25,

27, 29-32 and 34-35 are amended. Claims 1-35 are pending. Claims 1-35 are rejected.

2. The replacement drawings are acknowledged. Remarks concerning the

drawings are also acknowledged. Objection to the drawings are withdrawn.

3. Amendment to the title is acknowledged. Remarks concerning the

specification are acknowledged. Objection to the title and specification is withdrawn.

4. Amendments to the claims for addressing the objections are acknowledged.

The objection for claims 1-35 is withdrawn.

5. Remarks addressing the 35 U.S.C. 101 rejection have been fully considered.

The 35 U.S.C. 101 rejection for claims 7-12 and 31-35 is withdrawn.

The 35 U.S.C. 101 rejection for claims 13-18 is withdrawn.

The 35 U.S.C. 101 rejection for claim 19 is withdrawn.

The 35 U.S.C. 101 rejection for claims 20-25 is maintained. In view of claim 31,

it appears that the claims are intended to cover software modules per se. Therefore the

claims are non-statutory because they are software per se.

6. Remarks concerning the 35 U.S.C. 112, first and second paragraph rejection

have been fully considered. ·

The 35 U.S.C. 112, first paragraph rejection for claims 27 and 32 is withdrawn.

The 35 U.S.C. 112, second paragraph rejection for claims 13-16 is withdrawn.

The 35 U.S.C. 112, second paragraph rejection for claims 17 and 19 is withdrawn.

7. Arguments regarding the prior art rejection have been fully considered but are not persuasive. The following is in response to Applicants' arguments regarding the 35 U.S.C. 102(b) rejection for claim 1:

Applicants argue that Becker does not teach or suggest, "retrieving a stored value for each of said at least one mining structure variable from said data set training data; performing mining model initial processing on said retrieved stored value, and storing the results of the mining model initial processing" as claimed. The examiner respectfully disagrees.

Applicants appear to equate the "data set training data" to a "data file (a training set of data)" (emphasis added, col. 10, l. 29) in Becker. While the terminology may appear similar, the examiner recognizes that a different interpretation of Becker's teachings was used in the previous Action.

The examiner equates "a data set" of Becker (emphasis added, col. 10, l. 30) to the claimed "data set training data". It is noted that Applicants do not give an explicit definition of "data set training data" and therefore the broadest reasonable interpretation is used. Becker's "data set" is equated to the claimed "data set training data" because the data set of Becker pertains to data set training (col. 10, l. 29, "To create a data file (training set of data), a user starts with a data set", emphasis added).

The limitations are further treated in the rejection below. Therefore, Becker

teaches all of the claimed subject matter. The prior art rejection under 35 U.S.C. 102(b)

is maintained.

Accordingly, the prior art rejection under 35 U.S.C. 103(a) is maintained.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
conditions and requirements of this title.

8. Claims 20-25 are rejected under 35 U.S.C. 101 because the claimed

invention is directed to non-statutory subject matter.

As to claim 20, the various means, in view of claim 31, are reasonably

interpreted as software components. Therefore, all the elements of claim 20 are

reasonably interpreted as software, and claim 20 is non-statutory.

Claims 21-25 are rejected under 35 U.S.C. 101 because of their dependency on

rejected claim 20 and their failure to cure the deficiencies of claim 20.

Art rejection is applied in anticipation of Applicants amending the claims to

overcome the rejection under 35 U.S.C. 101.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-12, 20-26, 28, 31, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Becker (U.S. Patent 6,301,579).

As to claim 1, Becker teaches the following claimed subject matter:

At least one set of case data (mushroom data set, col. 10, ll. 30-31, or adult census data set, col. 10, ll. 66-67), each set of case data comprising a stored value for at least one variable from among a set of at least one variable (e.g., variables found in table of col. 11 for adult census);

Determining at least one mining structure variable from among said set of at least one variable (see list of determined variables on the table in col. 11);

For each set of case data, retrieving a stored value for each of said at least one mining structure variables from said data set training data (e.g., col. 11, ll. 21-25, referring to the table of col. 11, the first three attributes are from the data, therefore, a stored value from the data set has to be retrieved);

Performing mining model initial processing on said retrieved values (col. 10, ll. 34-38, col. 11, ll. 20-28);

Storing the results of said mining model initial processing (e.g., in a configuration file shown in the table of col. 11, and base table, col. 10, ll. 38-40, col. 11, ll. 42-50, col. 1, ll. 32-49, col. 1, ll. 32-42).

As to claim 2, Becker teaches wherein the step of determining at least one mining structure variable from among the set of at least one variable comprises

accepting creation operation data comprising data comprising the identity of said mining

structure variables (see the created variables in the table of col. 11).

As to claim 3, Becker teaches where the at least one mining structure variable

comprises a continuous variable (e.g., gross income, table of col. 11), where the

creation operation data comprises an indication regarding discretization of the

continuous variable (enumeration definition), and where the step of performing mining

model initial processing on said retrieved values comprises discretizing said continuous

variable according to said indication (see the enumeration in the table of col. 11).

As to claim 4, Becker teaches where the indication comprises an indication of a

number of buckets into which said continuous variable should be discretized (see the

various enumerations and corresponding buckets in the table of col. 11).

As to claim 5, Becker teaches where the indication comprises an indication of

sub-ranges into which said continuous variable should be discretized (see the various

enumerations and corresponding buckets in the table of col. 11, especially "gross

income").

As to claim 6, Becker teaches wherein the stored results are associated with at

least one mining model, and wherein each of the at least one mining model is trained

using said stored results (e.g., col. 6, ll. 64-66, col. 10, ll. 29-35, col. 11, ll. 45-50).

Claims 7-12 and 20-25 are drawn to a computer readable medium or system

claiming the same invention as method claims 1-6. Therefore, claims 7-12 and 20-25

are rejected based upon the same reasoning as stated above in the rejection of claims

1-6.

Claim 26 is drawn to a method claiming the same invention as method claims 1

and 6. Therefore, claim 16 is rejected based upon the same reasoning as stated above

for claims 1 and 6.

As to claim 28, Becker teaches accepting a drill through query for specified data

from said mining structure and providing said specified data (fig. 9B, col. 8, ll. 25-30).

As seen in fig. 9B, a query has to be accepted to display the data.

Claims 31 and 33 are drawn to a computer readable medium claiming the same

invention as method claims 26 and 28. Therefore, claims 31 and 33 are rejected based

upon the same reasoning as claims 26 and 28.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as
> set forth in section 102 of this title, if the differences between the subject matter sought to be
> patented and the prior art are such that the subject matter as a whole would have been obvious

at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 27, 29, 30, 32, 34, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Becker (U.S. Patent 6,301,579).

As to claim 27, Becker teaches training a mining model from a mining structure, as addressed above.

Becker does not expressly teach storing link data indicating training.

However, Official Notice is taken that at the time the invention was made, it was conventional to store data to indicate that an action was performed on some data (e.g., a flag or indicator). This indicator is connection data because it connects the data with the action performed on the data.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Becker with the above teachings, such that connection data (e.g., flag) is stored when the mining model has been trained on data from the mining structure. The motivation would have been to increase user friendliness by allowing a user to know if data has/has not been processed yet, and to take an appropriate action depending on the value of the indicator.

As to claim 29, Becker does not expressly teach where additional mining models are associated with said mining structure, and where said method further comprises training each of said additional mining models using said stored results.

However, Becker teaches training a mining model using stored results, as addressed above.

Additionally, it has been held that duplicating parts for a multiple effect is obvious.

In re Harza, 274 F.2d 669, 671, 124 USPQ 378, 380 (CCPA 1960). In this case,

training a single mining model using stored results is being duplicated to train two or

more mining models using the stored results.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify Becker with the above teachings, such that

additional mining models are trained using the stored results. The motivation would

have been to provide data for backup purposes.

As to claim 30, Becker does not expressly teach where said mining structure is

treated as a first class object in a database.

However, Official notice is taken that at the time the invention was made, it was

conventional to treat objects in a database as first class.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify Becker with the above teachings, such that the

data mining structure is treated as a first class object in a database. The motivation

would have been to enable persistency.

Claims 32, 34, and 35 are drawn to a computer readable medium claiming the

same invention as method claims 27, 29, and 30. Therefore, claims 32, 34, and 35 are

rejected based upon the same reasoning as claims 27, 29, and 30.

11. Claims 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Becker (U.S. Patent 6,301,579) in view of Hornick et al (U.S. Patent

6,865,573).

Claim 13 is drawn to the same subject matter of claims 1 and 2, taught by

Becker, in addition to an Application Programming Interface (API).

Becker does not expressly teach an API in connection with the subject matter of

claims 1 and 2.

However, Hornick teaches a data mining API (col. 6, ll. 49-67).

Since Becker also teaches data mining, as addressed above, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify

Becker with the above teachings, such that an API of Hornick is used in connection with

the data mining of Becker. The motivation would have been to support object oriented

programming languages within a data mining system, as taught by Hornick (Abstract, ll.

1-8).

As to claim 14, Becker, as modified by Hornick, teaches where the at least one

mining structure variable comprises a continuous variable (e.g., gross income, table of

col. 11), where the creation operation data comprises an indication regarding

discretization of the continuous variable (enumeration definition), and where the step of

performing mining model initial processing on said retrieved values comprises

discretizing said continuous variable according to said indication (see the enumeration

in the table of col. 11).

As to claim 15, Becker, as modified by Hornick, teaches where the indication

comprises an indication of a number of buckets into which said continuous variable

should be discretized (see the various enumerations and corresponding buckets in the

table of col. 11).

As to claim 16, Becker, as modified by Hornick, teaches where the indication comprises an indication of sub-ranges into which said continuous variable should be discretized (see the various enumerations and corresponding buckets in the table of col. 11, especially "gross income").

As to claim 17, Becker, as modified by Hornick, teaches retrieving stored results via a network (fig. 17, col. 27, ll. 3-55). A query has to be sent to retrieve the data.

As to claim 18, Becker, as modified by Hornick, teaches wherein the stored results are associated with at least one mining model, and wherein each of the at least one mining model is trained using said stored results (e.g., col. 6, ll. 64-66, col. 11, ll. 45-50).

Claim 19 is drawn to a system claiming the same invention as claim 13, as addressed above with respect to the combination of Becker and Hornick, in addition to a database for storing the training data, connected with the API, taught by Hornick (col. 2, ll. 25-32), and returning the stored values to said application programming interface.

Becker and Hornick do not expressly disclose returning the stored values to said application programming interface.

However, Hornick teaches an API that supports retrieval (returning) of data (col. 6, ll. 55-67).

Since Becker teaches stored values, as addressed above, it would have been to one of ordinary skill in the art at the time the invention was made to modify Becker and Hornick with the above teachings, such that the API of Hornick supports retrieval of the stored values of Becker. The motivation would have been to support object oriented

programming languages within a data mining system, as taught by Hornick (Abstract, ll. 1-8).

Conclusion

12. Applicant's arguments were fully considered but were not persuasive. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Lu whose telephone number is (571) 272-8594. The examiner can normally be reached on 8:30 - 5:00; M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

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Business Center (EBC) at 866-217-9197 (toll-free).

CL
Assistant Examiner
AU 2163
6/7/2006
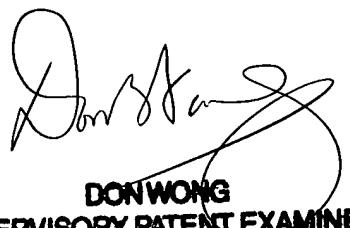
DON WONG
SUPERVISORY PATENT EXAMINER